

Serial No.: 10/714,106

IN THE DRAWINGS:

Please replace original Figure 6 with the attached replacement Figure 6.

REMARKS

I. Status Summary

Claims 1-31 are pending in the present application. Claims 1-5, 8, 9, 18, 19, 22-25 and 27-29 presently stand rejected, and claims 6, 7, 10-17, 20, 21, 26, 30 and 31 are presently objected to.

II. Figures

Original Figure 6 has been replaced with the attached replacement Figure 6, which corrects an informality in Figure 6 as originally filed. In Figure 6, the item formerly referred to as "622" and labeled as "TDM" has been corrected to show proper reference to item "507", labeled "TDM NIC", first described in Figure 5 as originally filed. A second instance of item "507" has been added to Figure 6 to show multiple instances of item "507", also as shown in Figure 5 as originally filed. The amended drawing does not add any new matter, and is fully supported in Figure 5 as originally filed and on page 16, lines 3-5 of the original specification.

III. Specification

On page 2, the Official Action states that the title of the invention, "Methods and Systems for Providing Transport of Media Gateway Control Commands Using High-Level Datalink Control (HDLC) Protocol", is not descriptive. Per the Examiner's suggestion, the title of the invention has been changed to "Methods and Systems for Transporting Media Gateway Control Commands Using High-Level Datalink Control (HDLC) Protocol".

Also on page 2, the Official Action indicates that the disclosure is objected to because reference number “622” labeled to TDM in FIG.6 is not disclosed. This informality was redressed with the substitution of a new Figure 6, which does not include an item with reference number “622”.

These changes have been made to the specification as indicated by the amendment(s) above.

IV. Claim Objections

Claims 1-6, 8-17, 19, 21, and 25-31 stand objected to because of informalities. With the exception of claim 2, modifications have been made to these claims per Examiner’s instructions, and applicants respectfully request that the objection to claims 1, 3-6, 8-17, 19, 21, and 25-31 be withdrawn.

Regarding claim 2, all corrections suggested in the Official Action have been made, with one exception: on page 2, the Official Action suggests that claim 2 be amended to “fully describe the acronym ‘MEGACO’ when reciting for the first time in the claim”. However, the term “MEGACO” used in claim 2 is not an acronym, but is the name of the media gateway control protocol format defined by the IETF Media Gateway Control Protocol Working Group, a group commonly referred to as the “MEGACO WG”. The MEGACO protocol is distinct from another protocol known as MGCP. Although “MGCP” is an acronym for “media gateway control protocol”, “MEGACO” is not an acronym. Therefore, applicants respectfully submit that in claim 2, there is no acronym that must be fully described.

Thus, applicants submit that the informalities objected to have been corrected and respectfully request that the objection to claims 1-6, 8-17, 19, 21, and 25-31 be withdrawn.

V. Claim Rejection - 35 U.S.C. § 103

Claims 1, 2, 4, 5, 8, 9, 19, 23, and 27-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,671,367 to Graf, et al. (hereinafter, "Graf") in view of U.S. Patent No. 6,097,720 to Araujo, et al. (hereinafter, "Araujo"). This rejection is respectfully traversed.

Independent claim 1 recites a method for transmitting a media gateway control command from a media gateway controller to a remote media gateway using a high-level datalink control (HDLC) protocol. The method includes generating a media gateway control command, inserting the media gateway control command into a command packet, inserting the command packet into an HDLC frame, and transmitting the HDLC frame to a media gateway using a time division multiplexed (TDM) channel. Independent claim 10 recites a media gateway that includes the capability to receive commands from an MGC and to differentiate between commands intended for itself and commands intended for a remote media gateway. The media gateway processes the commands intended for a remote gateway by encapsulating those commands into command packets, encapsulating the command packets into HDLC frames, and forwarding the HDLC frames to the remote media gateway via a TDM channel. Independent claim 18 recites a system for managing a remote media gateway, including an MGC operatively associated with an MGW, at least one of which having an HDLC

interface for encapsulating media gateway control commands intended for a remote MGW in HDLC frames, and at least one of which having a TDM interface operatively associated with the HDLC interface for sending the media gateway control commands to the remote MGW via a TDM channel.

Thus, each of independent claims 1, 10, and 18 recite using HDLC to carry a media gateway control command to a media gateway via a TDM channel. Such methods are useful in cases where a media gateway replaces legacy switching equipment connected via TDM links.

As acknowledged by the Official Action, there is no teaching, suggestion, or disclosure in Graf of a HDLC protocol, inserting the media gateway control command into a command packet, inserting the media gateway control command into an HDLC, or sending the HDLC packet containing the media gateway control command to a media gateway via a TDM link.

Page 6 of the Official Action, however, contends that Araujo teaches inserting a control command into a command packet, inserting the packet into an HDLC frame, and transmitting the HDLC frame to a gateway using a TDM channel. Applicants respectfully disagree and submit that Araujo does not disclose inserting a *media gateway control* command into a command packet, inserting the packet into an HDLC frame, or transmitting the HDLC containing the media gateway control command to a media gateway using a TDM channel.

To determine what a person of ordinary skill in the art would consider a media gateway control command, applicants refer first to the usage to this term in applicants'

specification and to two specifications maintained by the Internet Engineering Task Force, or IETF: *RFC 3425, "Media Gateway Control Protocol (MGCP)"*, version 1.0, available on the world wide web at URL <http://tools.ietf.org/html/rfc3435>; and *RFC 3525, "Gateway Control Protocol"*, version 1.0, commonly referred to as the "MEGACO" protocol, available on the world wide web at URL <http://tools.ietf.org/html/rfc3525>.

Applicants' specification recites that media gateway control commands, such as MGCP and MEGACO commands, are used to manage media gateways (Specification, page 3, lines 10-14), which provide bearer path connections between a TDM network and a packet network. Media gateway control commands are used to configure media gateways, including setting up HDLC channels (Specification, page 12, line 21), TDM network interfaces (Specification, page 13, lines 15-20), packet interfaces (Specification, page 13, line 21 through page 14, line 4), and voice server modules (Specification, page 14, line 5). Media gateway control commands provide instructions to or acquire information from other modules within the media gateway (Specification, page 13, line 10). Media gateway control commands are used to configure the media gateway to switch packets from the packet network to an appropriate voice server module **511** via packet matrix module **513**, through TDM matrix module **515** to a TDM timeslot via a TDM network interface card **507** (Specification, page 14, lines 5-14). In summary, media gateway control commands configure resources to set up or dismantle bearer channels through the media gateway, connecting a circuit-based network, such as a TDM network, to a packet based network, such as an Internet protocol network, for example (Specification, Figure 5).

The MEGACO specification, RFC 3525, page 10, defines a media gateway controller (hereinafter, "MGC") as an entity that "controls the parts of the call state that pertain to connection control for media channels in a media gateway."

The MGCP specification, RFC 3435, defines a media gateway control command as a command

"which is used between elements of a decomposed multimedia gateway. The decomposed multimedia gateway consists of a call agent, which contains the call intelligence, and a media gateway, which contains the media functions, e.g., conversion from TDM voice to voice over IP.

Media gateways contain endpoints on which the call agent can create, modify, and delete connections in order to establish and control media sessions with other multimedia endpoints."

(RFC 3435, Abstract, page 9). RFC 3435, page 33, describes media gateway control commands as "connection handling and endpoint handling commands." Thus, a media gateway control command is an instruction issued between a call agent and an entity that contains hardware and other resources for establishing connections between network entities and for converting media from one format to another format. Specifically, a media gateway control command is an instruction for creation or tear-down of bearer channels through a media gateway based on the needs of a call. (RFC 3435, section 2.3, Gateway Control Commands, page 33)

In Araujo, there is absolutely no teaching or suggestion of sending a media gateway control command to a media gateway via a TDM link. In Araujo, a remote access server (RAS) establishes point-to-point protocol (PPP) connections with client premises equipment (CPE) instances. There is no mention in Araujo of setting up this

call using any method other than the usual method in a public switched network **207**, i.e., sending SS7 signaling messages via the signaling plane.

The section of Araujo cited by the Official Action as describing an HDLC packet containing a media gateway control command to a media gateway (Araujo, column 12, lines 35-66), describes transmitting a multicast feed across a TDM network between two gateways **405** and **406**. Applicants respectfully disagree with the Official Action's characterization of the multicast feed as a "media gateway control command". As stated above, a media gateway control command is used to set up or take down a bearer channel. In contrast, the multicast feed in Araujo does not set up, take down, or in any manner configure a bearer channel, but is the bearer channel itself (emphasis added). Because the multicast feed in Araujo is the bearer channel, it cannot be a media gateway control command which by definition is used to establish a bearer channel. Thus, the multicast feed in Araujo is not a media gateway control command as indicated in the Official Action. For this reason alone, the rejection of this claim as unpatentable over Graf in view of Araujo should be withdrawn.

Furthermore, as recited in the independent claims, a media gateway control command is one generated by a media gateway controller and transmitted to a media gateway. In Araujo, however, the multicast feed is issued by a remote application server, RAS **408** (Araujo, Figure 11). Nowhere does Araujo disclose that RAS **408** controls the parts of the call state that pertain to connection control for media channels in a MGW, or indeed, performs any other function that one of ordinary skill in the art would associate with an MGC. In other words, RAS **408** in Araujo is not a media

gateway controller. Furthermore, the multicast feed in Araujo is not an instruction issued from an MGC to a media gateway. The multicast feed in Araujo referenced above terminates at central office switch **16**, which is fed by data backbone **21** and which services local loops to CPEs **7**, **8**, and **9** in Figure 1 of Araujo. In column 5, lines 58-66, Araujo discloses data transmission across data backbone **21** using an ATM virtual circuit, which is a TDM protocol. Nowhere does Araujo disclose the use of central office switch **16** to connect a TDM network to a packet network. Thus, the central office switch **16** in Araujo is not a media gateway.

In summary, in Araujo, the RAS **408** is not a media gateway controller, the central office switch **16** is not a media gateway, and the multicast feed is not a media gateway control command. Therefore, Araujo does not disclose inserting a media gateway control command into a command packet, inserting the packet into an HDLC frame, and transmitting the HDLC frame to a media gateway using a TDM channel.

Accordingly, for the reasons above, it is respectfully submitted that claims 1, 2, 4, 5, 8, 9, 19, 23, and 17-29 are believed to be in condition for allowance, and that their rejection as unpatentable over Graf in view of Araujo should be withdrawn.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Graf in view of Araujo and further in view of U.S. Patent No. 7,054,325 to Archibald (hereinafter, "Archibald"). This rejection is respectfully traversed.

Claim 3 depends from claim 1. As stated above with regard to the rejection of claim 1, Graf and Araujo fail to teach or remotely suggest encapsulating a media gateway control command in a command packet, encapsulating the command packet

into an HDLC frame, and sending the HDLC frame containing the media gateway control command to a media gateway via a TDM channel.

Archibald likewise fails to teach or suggest encapsulating a media gateway control command in a command packet, encapsulating the command packet into an HDLC frame, and sending the HDLC frame containing the media gateway control command to a media gateway via a TDM channel. Archibald is directed to correlating signaling messages conforming to different signaling protocols in a "distributed switch network" – i.e., a network using soft-switches, e.g., MGCs and MGWs. (See Abstract of Archibald). In Archibald, signaling links such as between an MGC and an MGW or between MGCs are monitored, and correlations between the signals so monitored are determined. The messages are correlated using parameters common to the messages, such as calling and called party, addresses of the media gateway, etc. In contrast to sending media gateway control commands to a media gateway via HDLC and TDM, Archibald discloses sending media gateway control commands to a media gateway using a non-TDM channel, such as MGCP protocol, which is UDP-based, not TDM-based (Archibald, Figure 1, item 26; column 4, lines 58-61) and discloses sending messages between media gateway controllers using SS7 (Archibald, Figure 1, item 22; column 4, lines 15-20), nowhere does Archibald teach or even remotely suggest encapsulating media gateway control commands in an HDLC frame or sending media gateway control commands to a media gateway via a TDM channel.

Accordingly, for the reasons stated above and with regard to claim 1, it is respectfully submitted that claim 3 is in condition for allowance and that the rejection of

claim 3 as unpatentable over Graf in view of Araujo and further in view of Archibald should be withdrawn.

Claim 22 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Graf in view of Araujo and further in view of U.S. Patent Application Publication No. 2003/0227908 to Scoggins, et al. (hereinafter, "Scoggins"). This rejection is respectfully traversed.

Claim 22 depends from claim 18. As stated above with regard to the rejection of claim 18, Graf and Araujo fail to teach or remotely suggest encapsulating a media gateway control command in a command packet, encapsulating the command packet into an HDLC frame, and sending the HDLC frame containing the media gateway control command to a media gateway via a TDM channel.

Scoggins likewise fails to teach or suggest encapsulating a media gateway control command in a command packet, encapsulating the command packet into an HDLC frame, and sending the HDLC frame containing the media gateway control command to a media gateway via a TDM channel. Scoggins is directed to using existing *signaling links* to negotiate session parameters such as bearer types. (See Abstract of Scoggins.) Nowhere does Scoggins disclose encapsulating media gateway control commands in an HDLC frame or sending media gateway control commands to a media gateway via a TDM channel.

Accordingly, for the reasons stated above and with regard to claim 18, it is respectfully submitted that claim 22 is in condition for allowance and that the rejection of

claim 22 as unpatentable over Graf in view of Araujo and further in view of Scoggins should be withdrawn.

Claims 24 and 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Graf in view of Araujo and further in view of U.S. Patent Application Publication No. 2003/0043734 to Takeguchi (hereinafter, "Takeguchi"). This rejection is respectfully traversed.

Claims 24 and 25 depend from claim 18. As stated above with regard to the rejection of claim 18, Graf and Araujo fail to teach or remotely suggest encapsulating a media gateway control command in a command packet, encapsulating the command packet into an HDLC frame, and sending the HDLC frame containing the media gateway control command to a media gateway via a TDM channel.

Takeguchi likewise fails to teach or suggest encapsulating a media gateway control command in a command packet, encapsulating the command packet into an HDLC frame, and sending the HDLC frame containing the media gateway control command to a media gateway via a TDM channel. Takeguchi is directed to providing redundant SDH connections between a pair of terminals, wherein if the first terminal of the pair switches from the main bearer path to the backup bearer path, the second terminal detects and mirrors the change so as to remain in communication in which the first terminal (Takeguchi, page 3, paragraph [0030]). For example, Takeguchi describes embedding a flag value in the SDH data frame which may be detected by the recipient of the frame (Takeguchi, page 3, paragraph [0040]).

However, the flag information is not a media gateway control command. As stated above, a media gateway control command is one that is issued between a call agent entity and a media gateway entity, e.g., between the media gateway controller and media gateway as recited in independent claims 1, 10, and 18. In Takeguchi, however, the information detected by the second SDH terminal in the bearer path is information that originated from the first SDH terminal in the bearer path, and not from a media gateway controller. Thus, the flag information in Takeguchi is not issued from a media gateway controller to a media gateway, and for this reason alone cannot be a media gateway controller command.

Furthermore, unlike the media gateway control commands recited by Applicants' claim 18, which are commands used to set up and dismantle bearer channels associated with a call through a media gateway, the information included in the SDH frame disclosed in Takeguchi is not a command issued to the receiving terminal but is merely information which the receiving terminal may detect and in response to which may take action. Also, the primary and backup bearer channels described in Takeguchi (which refers to them as the "work line" and "protection line" – Takeguchi, page 3, paragraph [0030]) are statically dedicated hardware that is either operating or not operating due to fault or maintenance. Nowhere does Takeguchi disclose or suggest that the information passed from one SDH to another is used to set up and dismantle bearer channels associated with a call. Thus, for this additional reason the information sent from one SDH terminal to another SDH terminal cannot be a media gateway control command.

Therefore, nowhere does Takeguchi disclose encapsulating media gateway control commands in an HDLC frame or sending media gateway control commands to a media gateway via a TDM channel.

Accordingly, for the reasons stated above and with regard to claim 18, it is respectfully submitted that claims 24 and 25 are in condition for allowance and that the rejection of claims 24 and 25 as unpatentable over Graf in view of Araujo and further in view of Takeguchi should be withdrawn.

VI. Allowable Claims

Dependent claims 6 and 7 were objected to as set forth in paragraph 3 of the Official Action and as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 6 and 7 depend from claim 1. For the reasons set forth above, it is believed that claim 1 is in condition for allowance and that claims 6 and 7 as amended are now also in condition for allowance. Therefore, applicants respectfully submit that claims 6 and 7 should be allowed.

Independent claim 10 was objected to as set forth in paragraph 3 of the Official Action, but would be allowable if rewritten to overcome the objection. Claim 10 has been rewritten to overcome the objection. Therefore, claim 10 should be allowed.

Claims 11-17 were objected to as set forth in paragraph 3 of the Official Action, and as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 11-17 depend from claim 10. For the reasons set forth above, claim 10

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is believed to be in condition for allowance. Furthermore, it is believed that claims 11-17 as amended are now also in condition for allowance. Therefore, applicants respectfully submit that claims 11-17 should be allowed.

Dependent claims 20, 21, 26, 30, and 31 were objected to as set forth in paragraph 3 of the Official Action and as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 20, 21, 26, 30, and 31 depend from claim 18. For the reasons set forth above, it is believed that claim 18 is in condition for allowance and that claims 20, 21, 26, 30, and 31 as amended are now also in condition for allowance. Therefore, applicants respectfully submit that claims 20, 21, 26, 30, and 31 should be allowed.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

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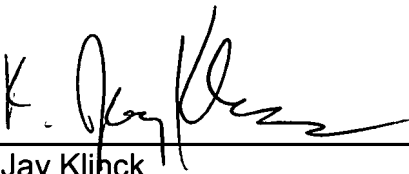
A check in the amount of \$1050.00 is enclosed. However, the Commissioner is hereby authorized to charge any deficiencies of payment or credit any overpayment associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON, TAYLOR & HUNT, P.A.

Date: October 30, 2007

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1497/6 KJK/sda

Enclosure